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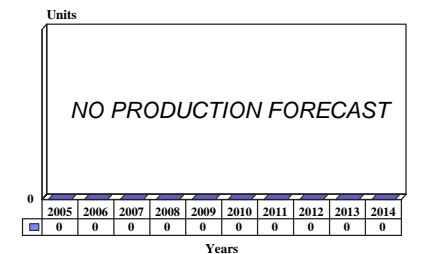
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## Boeing 757 - Archived 5/2006

### Outlook

- Final 757 deliveries in 2004
- 787 successor expected to debut in 2008

10 Year Unit Production Forecast  
2005 - 2014



### Orientation

**Description.** Twin-engine, high-capacity, medium-range, narrowbody commercial transport.

**Sponsor.** Development and production of the 757 is sponsored privately by The Boeing Company.

**Status.** Production line closed in 2004.

**Total Produced.** Through 2004, Boeing produced 1,050 757s, including one test article.

**Application.** Short/medium-range, medium-density scheduled passenger transportation; scheduled small package and general freight transportation.

**Price Range.** 757-200, \$72 million; 757-300, \$82 million. Both in 2004 dollars.

### Contractors

Boeing Commercial Airplanes, Division HQ, <http://www.boeing.com>, PO Box 3707, Seattle, WA 98124 United States, Tel: 1 (206) 655-2121, Fax: 1 (206) 766-2933, Email: [wwwmail.boeing2@boeing.com](mailto:wwwmail.boeing2@boeing.com), Prime

Rolls-Royce plc, <http://www.rolls-royce.com>, 65 Buckingham Gate, London, SW1E 6AT United Kingdom, Tel: 44 20 7222 9020, Fax: 44 20 7227 9178

Pratt & Whitney, <http://www.pratt-whitney.com>, 400 Main Street, East Hartford, CT 06108 United States, Tel: 1 (860) 565-4321, Email: [info@pratt-whitney.com](mailto:info@pratt-whitney.com)

Honeywell Commercial Aviation Systems, <http://www.cas.honeywell.com>, 21111 North 19th Avenue, Phoenix, AZ 85027 United States, Tel: 1 (602) 436-2311

### Technical Data

**Design Features.** Wing features 25-degree sweep at quarter chord. Specially designed wing section with 5-degree dihedral and 3-degree 12-foot incidence. All-speed fully powered ailerons outboard of double slotted flaps; inboard and outboard trailing edge flaps. High-

lift full-span leading edge slats. Five flight spoilers, one ground spoiler on wing upper surface forward of trailing edge flaps. Pivoting, full-span torque box tailplane, and three-spar rudder.

	<u>Metric</u>	<u>U.S.</u>
<b>Dimensions (Passenger Versions)</b>		
(External)		
Length overall	47.32 m	155.3 ft
Height	13.56 m	44.5 ft
Wingspan	37.8 m	124.10 ft
(Internal)		
Cabin max width	3.56 m	11.666 ft
Cabin length	36.07 m	118.333 ft
Cabin volume	230.38 cu m	8,135 cu ft
<b>Weight</b>		
Operating weight, empty		
(RR 535E4)	57,180 kg	126,059 lb
(PW2000)	57,040 kg	125,750 lb
Max takeoff weight, basic	99,700 kg	220,000 lb
Max takeoff weight (PF)	113,400 kg	250,000 lb
Zero fuel weight (PF)	90,720 kg	200,000 lb
<b>Capacities</b>		
Standard fuel	42,595 liters	11,253 gal
Lower hold cargo volume	50.7 cu m	1,790 cu ft
Max payload	26,422 kg	58,250 lb
<b>Capacities (757 PF)</b>		
Cargo volume	238.7 cu m	8,430 cu ft
Payload	40,329 kg	88,910 lb
<b>Performance</b>		
Max range: 757-200/-300	7,335 km/6,482 km	3,955 nm/3,500 nm
Max cruise speed (37,000 ft)	Mach 0.79	
Max cruise speed (41,000 ft)	Mach 0.86	

**Propulsion**

757-200	(2)	Rolls-Royce RB211 three-spool, high-bypass-ratio turbofans. Ratings are as follows: RB211-535E4, 178.36 kN (40,100 lbst); RB211-535F5, 191.28 kN (43,000 lbst) each (Max T-O thrust at sea level), or
	(2)	UTC Pratt & Whitney PW2037 twin-spool, high-bypass-ratio turbofans rated 169.91 kN (38,200 lbst) each. (Max T-O thrust at sea level), or
	(2)	PW2040 rated 185.48 kN (41,700 lbst).
757-300	(2)	Rolls-Royce RB211-535E/F turbofans rated 191.74 kN (43,100 lbst) each, or
	(2)	UTC Pratt & Whitney PW2043 turbofans rated 191.29 kN (43,000 lbst) each.
757PF	(2)	United Technologies Pratt & Whitney PW2040, rated 185.48 kN (41,700 lbst), or
	(2)	Rolls-Royce RB211-535E4 turbofans rated 178.36 kN (40,100 lbst); RB211-535F5 turbofans rated 191.28 kN (43,000 lbst).

**Seating**

757-200. Typically seats 186, 16 first class (96.52 cm [38 in] pitch), 170 economy (86.36 cm [34 in] pitch); or 214 passengers, all economy (81.28 cm [32 in] pitch). 220 to 239 seats in shuttle-type operations. Six-abreast standard.

Typical U.S. aircraft equipped with 186 seats in two classes with three passenger doors and an emergency exit on the left side. European aircraft generally seat 206, three left side doors and an additional mid-fuselage emergency exit.

757-300. Seats 20 percent more passengers than -200, or about 223 seats in two class, 250 seats in one.



BOEING 757-300

Source: Boeing

## Variants/Upgrades

757-200. Baseline 757 has 99,792 kilogram (220,000 lb) TOW, range of 3,221 kilometers (1,738 nm) with 196 passengers. Options for 230,000-, 240,000-, and 250,000-pound max TOW available.

757-200PF. Package freighter version launched by UPS in 1985. Major changes include a 134 inch x 86 inch cargo door; a solid barrier across the front of the aircraft between the cockpit and cargo hold; five supernumerary seats in lieu of three; and deletion of the passenger doors and windows, air conditioning, oxygen, lavatories, galleys, and stowage racks.

Carries 16 main deck containers, including 14 measuring 88 x 124 inches on the main deck and two larger containers in the last position aft. Main deck volume is 6,610 cubic feet. Forward and aft lower deck bays hold an additional 1,830 cubic feet of bulk freight. Max payload is 34 U.S. tons for U.S. domestic operations and 25 tons from New York to London.

757-200M Combi. Launched by Royal Nepal. Carries two or three 108-inch standard containers on main deck or a maximum of nine tons of cargo. With three containers, the Combi seats 123 to 148 passengers.

757-200ERX. Proposed longer range, heavier variant capable of flying from Europe to the U.S. Midwest. Development was suspended in late 2001, but may resurface.

757-300. Stretched version seating up to 250 in single-class configuration; 10 percent reduction in seat-mile costs. First deliveries in March 1999.

Features a 23.3-foot fuselage stretch with 160-inch extension forward, 120-inch extension aft of wing. Max TOW rises to about 270,000 pounds. Cargo capacity rises by 50 percent.

C-32A. The U.S. Air Force chose the 757-200 in 1996 to replace its VC-137B (707) VIP aircraft. The C-32A provides congressional and executive airlift support. A secure communications suite is installed, and a modular quick-change kit is installed in stateroom and conference areas as needed. Four aircraft were ordered as part of a \$365.5 million award from the VC-X program. USAF leases the aircraft with the option to buy them later.

## Program Review

**Background.** The 757 was announced in 1978, with its design heavily emphasizing fuel efficiency. First flight took place in 1982 and the 757 was the first Boeing transport launched with a non-U.S. engine (Rolls-Royce RB211-535).

The 757 evolved from the late 1970s 7N7 studies of a 136-seater weighing 155,000 pounds at takeoff, powered by CFM56-2 or Pratt & Whitney JT10D fans. Little airline interest materialized and Boeing came up with the larger, 150-seat design, which became the 757. Capacity was increased, to 174 in 1979 and to 186 in 1981.

The program was marred by very slow initial sales, but began finding a warmer market response by 1988.

**Recent Developments.** In late 2003, Continental switched orders for six 757s to the smaller 737-800 model, effectively gutting the remaining order backlog. Boeing then announced it would close the 757 line in late 2004 on the completion of outstanding orders for Continental, Icelandair, Shanghai Airlines, and Air 2000.

## Funding

Boeing provided all development and production financing for the 757. Total cost to develop and certify the 757 and 767 in the dual-aircraft effort was \$2.5 billion in 1982 U.S. dollars, or \$4.5 to \$5 billion in 1993 U.S. dollars.

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Feb	1978	757 announced; follow-on to earlier 7N7 studies
Sep	1978	757 launched with RB211 engines
Mar	1979	Official go-ahead announced
Nov	1980	Delta orders 50 PW2037-powered aircraft
Feb	1982	Prototype first flight
Dec	1982	Certification of RB211-powered 757
Dec	1982	Initial deliveries to Eastern and British Airways
Nov	1984	First delivery of PW2037-powered 757 to Delta
Late	1985	UPS launches 757PF with order for 20
Feb	1986	757-200C Combi launched
Sep	1988	First -200C Combi delivered
Aug	1996	757-200 (as C-32A) selected to replace USAF VC-137B VIP aircraft
Sep	1996	757-300 program launched
Aug	1998	757-300 first flight
Mar	1999	First deliveries of 757-300 (to Condor Flugdienst)
Late	2004	Final 757 completed
	2008	Anticipated debut of 7E7 successor

## Worldwide Distribution

See the "World Airline Inventories, Orders and Options" appendix, now available on-line.

## Forecast Rationale

Boeing rolled out the last 757 in late October 2004, and that aircraft and one more were held in storage at Boeing Field until their delivery to Shanghai Airlines in April 2005.

The aircraft had not been selling well in recent years and the Boeing announcement did not really come as a surprise to most industry observers. The manufacturer's upcoming 787 Dreamliner, slated to enter the market in 2008, is the heir apparent to both the 757 and 767 models.

## Ten-Year Outlook

### ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 04	High Confidence Level				Good Confidence Level				Speculative			Total 05-14
			05	06	07	08	09	10	11	12	13	14		
BOEING														
757-200	PW2000	399	0	0	0	0	0	0	0	0	0	0	0	0
757-200	RB.211-535C/E4/F5	514	0	0	0	0	0	0	0	0	0	0	0	0
757-300	PW2043	15	0	0	0	0	0	0	0	0	0	0	0	0
757-300	RB.211-535E/F	41	0	0	0	0	0	0	0	0	0	0	0	0
757PF	PW2000	36	0	0	0	0	0	0	0	0	0	0	0	0
757PF	RB211-535E4/F5	44	0	0	0	0	0	0	0	0	0	0	0	0
Total Production		1049	0	0	0	0	0	0	0	0	0	0	0	0